REMARKS/ARGUMENTS

Claims 1-14 and 16-26 were pending in this application. Claims 1-9, 21-24 and 26 have been cancelled without prejudice, and new claims 27-50 have been added. The new claims are supported in the Specification, and do not include new matter. See e.g., Specification at page 12, lines 6-12. Applicants reserve the right to prosecute the cancelled claims in the future.

Claim Rejections under 35 U.S.C. § 102(b)

Claims 1-2, 4-5, 7-8, and 21 are rejected under U.S.C. 102(b) as allegedly being anticipated by US Patents 4,454,069, 6,417,352, or 5,288,861. Applicants must respectfully disagree. However, to further Applicants' business interests, Applicants have cancelled these claims without prejudice. Applicants address the Examiner's rejections in view of new claims 37-50. Specifically, new claim 37 recites agglomerates of clavulanates having a bulk density of between about 0.2 g/mL and 0.6 g/mL, with the proviso that the rosette-like crystalline form of potassium clavulanate is excluded.

U.S. Patent No. 4,454,069 describes clavulanic acid salts and their preparation from the tertiary butyl amine salt. The clavulanate microcrystals were characterized as well-defined needles or butterfly-shaped plates. See, column 5, lines 36-39. Unlike the presently claimed invention, U.S. Patent No. 4,454,069 does not describe agglomerates of clavulanates having a bulk density of between about 0.2 g/mL and 0.6 g/mL.

Specifically, the agglomerates of the presently claimed invention have a bulk density of between about 0.2 g/mL and 0.6 g/mL, and exhibit improved flowability and less compressibility compared to needle shaped crystals. For example, the bulk density of potassium clavulanate agglomerates is about 0.5 g/mL, while the bulk density of potassium clavulanate needles is 0.18 g/mL. Furthermore, potassium clavulanate agglomerates have a compressibility of 28 %, in contrast to potassium clavulanate needles, which have a compressibility of 50 %. See, Specification at page 12, lines 6-8, and Table 1 at page 17. Because U.S. Patent No. 4,454,069 does not describe agglomerates of clavulanates, this reference does not anticipate new claims 37-50.

U.S. Patent No. 6,417,352 describes a process for isolating alkali metal salts of clavulanic acid from a fermentation broth containing impure clavulanic acid. The process comprises the steps of filtration of the fermented broth, extraction of the clavulanic acid to a water immiscible or partly immiscible solvent, and precipitation of an alkali metal salt of clavulanic acid by addition of an alkali metal alkylalkanoate. Potassium clavulanate crystals are subsequently collected by filtration. See, Abstract, and column 4 at lines 55-56.

As the Examiner indicated, the form of microcrystals obtained was not stated. Because U.S. Patent No. 4,454,069 does not describe agglomerates of clavulanates, this reference does not anticipate new claims 37-50. Furthermore, if the Examiner is relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. MPEP 2112 (quoting *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990, emphasis in original)).

U.S. Patent No. 5,288,861 describes potassium clavulanates in rosette form. The potassium clavulanates in rosette form were obtained by crystallization or recrystallization using inverse precipitation. See, Abstract. However, this patent does not describe agglomerates of clavulanates having a bulk density of between about 0.2 g/mL and 0.6 g/mL. Furthermore, rosette-like crystalline forms of potassium clavulanates have been specifically excluded from the claims. Because U.S. Patent No. 5,288,861 does not describe each and every element of the claimed invention, this reference does not anticipate new claims 37-50,

Claims 1-2, 4, 6-8, 21-22-24 [sic], and 26 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by WO97/33564. Applicants must respectfully disagree. However, to further Applicants' business interests, Applicants have cancelled these claims without prejudice. Applicants address the Examiner's rejections in view of new claims 37-50.

WO 97/33564 describes a process for making agglomerates of penicillin, amoxicillin and cephalexin by extrusion, without the presence of excipients. Specifically, a paste is made of a crystalline powder by adding a liquid, wherein the powder is insoluble or slightly soluble. The paste

is kneaded, then extruded in a double screwed extruded, after which the granules are dried. See, Examples 1 and 2. Furthermore, WO 97/33564 describes mixing agglomerates of penicillin V potassium, amoxicillin trihydrate, or cephalexin monohydrate with potassium clavulanate. See, WO 97/33564, lines 1-8. However, WO 97/33564 is silent with regard to agglomerates of clavulanates, and describes only potassium clavulanates that are generally insufficiently free-flowing and incompressible. See, WO 97/33564 at page 9, line 6. As previously indicated above, the agglomerates of the presently claimed invention have a bulk density of between about 0.2 g/mL and 0.6 g/mL, and exhibit improved flowability and less compressibility compared to needle shaped crystals. See, Specification at page 12, lines 6-8, and Table 1 at page 17. Because WO 97/33564 does not include every element and limitation of the claimed invention, this reference does not anticipate new claims 37-50.

Claims 1-2, 7-8, and 21 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by US Patent 4,863,915. Applicants have cancelled these claims without prejudice, rendering the rejection moot as to these claims. Applicants address the Examiner's rejections in view of new claims 37-50.

U.S. Patent No. 4,863,915 describes crystalline anhydrous amoxicillin. Unlike the presently claimed invention, this patent does not describe agglomerates of clavulanate. Thus, this patent does not anticipate new claims 37-50.

Claims 1-2, 7-9, and 21 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by US Patents 4,584,291, 3,697,506, 3,692,781, or 5,250,525. Applicants have cancelled these claims without prejudice, rendering the rejection moot as to these claims. Applicants address the Examiner's rejections in view of new claims 37-50.

U.S. Patent No. 4,584,291 describes tetrazolyl derivatives of clavulanic acid. U.S. Patent No. 3,697,506 describes crystalline metal salts of α-carboxybenzylpenicillin. U.S. Patent No. 3,692,781 describes rod-like cephalexin crystals. U.S. Patent No. 5,250,525 describes 4-oxo-azetidine-2-sulfonic acids and their salts. None of these patents describe agglomerates of clavulanates having a bulk density of between about 0.2 g/mL and 0.6 g/mL. Because none of the

references include every element and limitation of the claimed invention, these patents do not anticipate new claims 37-50.

Claims 1-2, 7-8, 10-13, 16, and 21 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by US Patents 4,138,555, 3,932,386, or 4,073,902. Applicants have cancelled claims 1-2, and 7-8 without prejudice, rendering the rejections moot as to these claims. Applicants have also amended independent claim 10. Applicants address the Examiner's rejections in view of the amended claims, and in view of new claims 37-50.

U.S. Patent Nos. 4,138,555 and 4,073,902 describe cephalosporin compounds. U.S. Patent No. 3,932,386 describes penicillanic acids. None of these patents describe agglomerates of clavulanates having a bulk density of between about 0.2 g/mL and 0.6 g/mL. Furthermore, none of these patents describe a process for preparing crystallized clavulanate agglomerates, comprising stirring a clavulanate in a liquid phase. Because none of the references include every element and limitation of the claimed invention, these patents do not anticipate the presently claimed invention.

Claims 1-2, 7-8, 10-14, 16, 21, and 25 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by US Patent 4,659,812. Applicants have cancelled claims 1-2, 7-8 and 21 without prejudice, rendering the rejections moot as to these claims. As previously indicated above, Applicants have also amended independent claim 10. Applicants address the Examiner's rejections in view of the amended claims, and in view of new claims 37-50.

U.S. Patent No. 4,659,812 describes crystalline cephalosporin intermediates. Unlike the presently claimed invention, this patent does not describe agglomerates of clavulanates, nor a process for preparing crystallized clavulanate agglomerates comprising stirring a clavulanate in a liquid phase. Thus, this patent does not anticipate the presently claimed invention. Based on the above, Applicants respectfully request that the rejections under 35 U.S.C. 102(b) be withdrawn.

Claim Rejections Under 35 U.S.C. § 103(a)

Claim 9 is rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over US Patent Nos. 4,138,555, 4,584,291, 3,697,506, 3,692,781, 3,932,386, 4,073,902, 5,250,525, 4,659,812,

4,863,915, 4,454,069, 6,417,352, or 5,288,861, or WO97/33564. Applicants have cancelled claim 9, rendering this rejection moot. Thus, Applicants respectfully request that these rejections under 35 U.S.C. 103(a) be withdrawn.

Claim Rejections Under 35 U.S.C. § 112

Claims 1, 2, 7-14, 16-26 are rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite in use of the terms "substantially free," "high," and "non-agglomerated crystals." Further, the Office indicates claim 19 fails to limit, claim 24 fails to limit claim 21 and claim 26 fails to limit claim 22. Furthermore, the Office indicates that claim 22 cannot depend on claim 5. As previously indicated, Applicants have canceled claims 1-2, 7-9, and 21-26 without prejudice and without acquiescing to the Examiner's arguments, rendering the rejection moot as to these claims. Applicants have also amended claim 10, and added new claims 37-50. Applicants address the Examiner's rejections in view of the amended and new claims.

The amended and new claims do not use the terms "substantially free," "high," and "non-agglomerated crystals," rendering the Examiner's rejections moot. In contrast, new claims 37-50 relate to agglomerates of clavulanate having a bulk density of between about 0.2 g/mL and 0.6 g/mL. Furthermore, Applicants have amended claim 19 to recite an average particle size between about 1 μm and 1500 μm. Applicants have canceled claims 24 and 26, rendering these rejections moot. Thus, Applicants respectfully request that the rejections under 35 U.S.C. 112 be withdrawn.

Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the enablement requirement. The Examiner states that clavulanic acid is an unstable, viscous oil, and cannot be crystallized. See, Office Action, page 6. To further Applicants' business interests without acquiescing to the Examiner's rejection, Applicants have cancelled claim 3 without prejudice, rendering this rejection moot.

Claims 10-14, 16-20, and 25 are rejected under 35 U.S.C. 112, first paragraph as failing to comply with the enablement requirement. Specifically, the Examiner states that the specification is enabling for potassium clavulanate, but does not provide enablement for other β-lactams. See,

Office Action, page 6. To further Applicants' business interests and without acquiescing to the Examiner's arguments, Applicants have amended the claims to recite agglomerates of clavulanates, and processes for making the same. The agglomerates may comprise a pharmaceutically acceptable salt, such as potassium clavulanate. See, Specification at page 1, lines 6-9. Applicants reserve the right to prosecute broader claims in the future.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicant(s) petition(s) for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 246152015300.

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Respectfully submitted,

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